equipment to all primary schools (ii) The Non-Formal Education programme has been strengthened and reorganised to provide education to school drop-outs, girls who cannot attend whole day schools, working children and children in habitations without schools (iii) Teacher Education has been reorganised and restructured to increase teacher competence. All these measues are designed to have a significant impact on universal enrolment and universal retention of children upto 14 years of age.

**Diversion of Indian Zircalloy to Pakistan**

179. SHRI ATAL BIHARI VAJPAYEE:

SHRI ASHWANI KUMAR:

Will the PRIME MINISTER be pleased to refer to the answer to Unstarred Questions 1733 and 2536 given in the Rajya Sabha on the 7th May and 8th August, 1989, respectively and state:

(a) what are the clarifications received from M/s. NTG Nukleartechnik Gmbh (NTG) and from the Government of Federal Republic of Germany regarding illegal diversion of Indian Zircalloy to Pakistan and the follow-up action taken by Government; and

(b) what are the norms for exporting such materials, who gave the clearance for export in this case and what precautions were taken to eliminate its diversion to Pakistan?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (PROF. M. G. K. MENON): (a) Upon enquiry by Government, M/s. NTC have clarified that the zircaloy products supplied by India were further sold by its former Manager, Mr. Ortmayer to another company called M/s. Physikalische Beretung (PTB) in FRG. M/s. PTB in turn exported Zircaloy products to Pakistan without observing the existing legal regulation in FRG. M/s. NTG has informed that Mr. Ortmayer has been dismissed from the company since February 1988. Authorities in FRG have started proceedings against Mr. Ortmayer on charges of illegal exports of nuclear material including zircaloy products.

(b) The policy of the Government is not to export as a general rule, zirconium, uranium and other nuclear materials. Exceptions are made in special cases and in respect of small quantities of such materials to be supplied to countries for experiments under bilateral cooperation agreements in the field of peaceful uses of atomic energy. However, since the objective behind NFC exports of zircaloy to NTG was to test the acceptability of its products in the international market and to earn foreign exchange, Government had accorded its approval for the exports. In its telex order for purchase of zircaloy materials for use in certain irradiation tests, NTG had indicated that the supplied zircaloy would not be resold.

In the light of diversion of Indian zircaloy to Pakistan by NTG, Government has tightened the procedure for export of nuclear materials with strategic significance. The approval will be given only on a case by case basis. Undertakings will be obtained from the recipient countries that the supplied material shall not be diverted for any non-peaceful use and that it shall not be transferred to a third country without the prior approval of the Indian Government.

**Working group on use of Sanskrit for Natural language processing in Computers**

180. SHRI PRAMOD MAHAJAN:
SHRI ASHWANI KUMAR:

Will the PRIME MINISTER be plesae dot refer to answer to Unstarred Questions 2527, 411 and Starred Question 86 given in the Rajya Sabha on the 8th August, 1989, the 15th November,

1988 and the 28th February, 1989, respectively and state:

(a) whether it is a fact that on the 12th December, 1988, the Working Group had recommended INITIATION of a PROJECT on investigating the use of Sanskrit language for natural language processing; if so, the progress made so far, indicating the names and addresses of the persons involved in the project in this regard, alongwith each one's qualifications and experience;

(b) whether on the 6th April, 1989 the Advisory Committee had recommended exploring the sources of knowledge of Ancient Indian Sciences and studying their usefulness; if so, the progress made so far, indicating the names, addresses, qualifications and experience of the persons involved in the work; and

(c) whether an amount of Rs. 5 lakhs was allotted to the Centre for Development of Advanced Computing, Pune for a Project entitled Implementation of Sanskrit as language for natural language processing; if so, the work done so far?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (PROF M. G. K. MENON): (a) and (c) Yes, Sir, The Working Group has recommended the initiation of a project on investigating the use of Sanskrit language for natural language processing. An amount of Rs. 5 lakhs has been allocated to the Centre for Development of Advanced Computing (CDAC) Pune for this project.

The project on the use of Sanskrit for natural language processing was initiated at the CDAC, Pune. Graphic and Intelligence Based System Technology (GIST) has enabled the interfacing of Devanagari languages including Sanskrit with artificial intelligence programming environment such as LISP, PROLOG etc. A Devanagari Expert System Shell (DESS) called VISHESHAGYA has been developed. It would provide a processing environment to Sanskrit Pandits and domain experts in Indian Languages and ancient Indian sciences as well as computer scientist for developing expert systems directly using Sanskrit and other Indian languages.

In respect of tools and techniques for natural language processing, an activity titled "Computational Rendering of Paninis Grammer" has been taken up as a sub-project. A prototype Sanskrit tutorial system has been developed in LISP that accepts sentences from users, checks for grammatical errors and identifies the KARAKAS. The system uses the Sanskrit dictionary wherein relevant information concerning Sanskrit words is stored. The prototype system is a part of the overall goal of developing a full fledged Sanskrit understanding system.

Details of the persons on the project are given in Annexure I.

[See Appendix CLII, Annexure No. 4].

(b) Yes, Sir. As recommended by the Advisory Committee the following areas in knowledge Based Computer System and Ancient Indian Sciences have been taken up for further study:—

1. Preservation of Ancient Indian Manuscripts using GIST.

2. Ayurvedic Health Diagnostic Expert System.

3. Yoga Health Advising System.

The details of the persons working on this project are given in Annexure II.

[*See* Appendix CLII, Annexure No. 5).